

SOCIO-ECONOMIC FACTORS INFLUENCING AWARENESS AND USE OF ORGANIC FARMING PRACTICES BY HORTICULTURAL FARMERS IN OYO STATE NIGERIA.

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ABSTRACT

The health hazards posed by inorganic fertilizers, pesticides and herbicides cannot be overemphasized. Despite this, there is still the need to know empirically the level of awareness and use of organic farming practices and socio-economic factors influencing it among horticultural farmers. Data for the study were collected through qualitative and quantitative methods involving Focus Group Discussion (FGD) as well as the use of structured interview schedule. A total number of 62 respondents were sampled and they were selected through multi-stage and purposive sampling techniques from the four zones of Oyo State Agricultural Development Programme (OYSADEP). Data were analyzed using descriptive and inferential statistics such as frequency counts, percentages, means and Chi-square analysis. Half of the respondents' falls between the ages brackets of 30-40 years (50%). 46.8% of the respondents have a household size of 4-6, while 72.6% are males and 87.1% were married. Awareness score of 85.5% of the respondents about organic farming was high while 61.3% were into organic farming though unconsciously. Most (96.8%) of the respondents identified time consuming as the highest constraints in organic farming practices. Chi-square analysis revealed that, land acquisition, educational qualification and source of information have significant influence on horticultural farmers' awareness and use of organic farming practices at $P=0.05$. It was therefore recommended that, female farmers should be encouraged and empowered in organic farming practices. Capacity building through training of respondents on newly generated technologies in organic farming practices should be embarked upon to improve the health and livelihood of farmers.

KEYWORDS: Organic farming practices, awareness and use, horticultural farmers

INTRODUCTION

Horticulture is an aspect of agriculture and is the mainstay of some African countries livelihoods (Mendelsohn *et al* 2000; Devereux and Maxwell, 2001). Horticulture deals with the production, distribution, and utilization, of fruits, vegetables, spices, and ornamental plants. Among the rungs of the ladder of man's basic needs is food self-sufficiency which is a state in which the daily intake of calories, proteins, vitamins and minerals form the pre-requisites for normal, mental and physical development is guaranteed (Olufolaji, 2009). About 65% of Nigerians are involved in horticultural activities, horticulture accounted for 25-60% of annual Gross Domestic Product between 1962 – 1985 attracting 1 - 14% of the government's capital expenditure during successive development plans for that period. Horticultural crop production creates jobs; and because of its intensive nature, it provides twice the amount of employment per hectare compared to cereal crop production (Alli *et al*, 2002). Also, horticultural crops can play a vital role in solving the global micro-nutrient crisis for over two billion people, the majority of whom are women and children (UN/SCN, 2004).

Organic farming is one of several approaches to sustainable agriculture, and many of the techniques used such as inter-cropping, mulching, and integration of crops and livestock - are practiced under various agricultural systems. What makes organic agriculture unique is that, under various laws and certification programmes, almost all synthetic inputs are prohibited and "soil building" crop rotations are mandatory (FAO, 1999). Organic farming means using methods in tune with nature, enhancing the local eco-system, without adding synthetic substances such as chemical fertilizers and pesticides. (FAO 2001) reported that 'organic farming can reduce hunger and environmental damage.'

Thus, organic agriculture can go a long way to mitigate against the effect of global climate change it is the best form of agriculture that can overcome the harmful impacts of the Green Revolution on soil, air, water, landscapes and humans globally (Christian *et al*, 2005). Significant development in certified organic farming has been attained with nearly 31 million hectares of land currently being managed organically in 120 countries of the world. The world,

market for organic foods and beverages was US\$ 40 billion in 2006 which is 2% of total food retail in the developed countries (Willer and Yussefi, 2007). Unfortunately, in this big organic market the share of the developing countries like Nigeria is really very little or virtually nothing. Though Kilcher (2002), Mc Neely and Scherr (2002) and Yussefi and Willer (2003) strongly recommended that organic agriculture is not just a resolution for more wealthy countries but also effective in poorer countries; for purposeful socio-economic and ecological sustainability. Thus, this study was an attempt to explore the socio-economic factors influencing awareness and use of organic farming practices among horticultural farmers in Oyo State Nigeria. The specific objectives are to:

- (i) Identify the socio-economic characteristics of horticultural farmers.
- (ii) Determine awareness and use of organic farming practices by horticultural farmers
- (iii) Identify constraints faced by horticultural farmers in the use of organic farming practices.

Hypothesis of the study:

There is no significant relationship between socio-economic characteristics and awareness and use of organic farming practices among horticultural farmers.

METHODOLOGY

The study area was Oyo State, boarded by Benin Republic in the west, in the North and East by Kwara and Osun States respectively and Ogun state in the south. Oyo State covers a land area of 27,000 sq kilometers and is made up of 33 Local government areas. The State is divided into four agricultural zones by ADPs namely: Ibadan / Ibarapa, Oyo, Ogbomosho and Saki zones. Based on the prevailing climatic and soil characteristic, three vegetation zones are identifiable in Oyo State. These are forest, savanna, and derived savanna. The forest zone with high relative humidity favours the cultivation of tree crops such as Cocoa, Kola, Citrus, and Oil Palm as well as arable crops like maize, cassava, yam and rice. Areas within Ibadan zone and up to Fiditi town fall within the forest zone. The derived savanna has a mixture of forest and savanna vegetation. Oyo, Ogbomosho, Ilora, Fasola, Eruwa and Lagelu fall within this zone. The savanna zone favours mainly arable crops such as sorghum, maize, cowpea and yam with some parcel of land, which can support tree crops. The wide expanse of land covered by Oyo / Ogbomosho zone in the south to Saki zone is savannah (MANR, Oyo State 2001).

For the purpose of this study Oyo and Ogbomosho zone were purposively sampled because they have being identified to have a lot of horticultural produce. In fact a particular town Fiditi in the zone is being referred to as "home of fruits". Sixty –two respondents were sampled in all. Those considered as horticultural farmers in this study are those that grows all kinds of fruits and vegetables. Data was collected through the use of Focus Group Discussion (Qualitative) and structured interview guide (Quantitative). It was analyzed using both descriptive (frequencies, percentages) and inferential statistics.

RESULTS AND DISCUSSION

Socio-economic characteristics of respondents

Majority (50.0%) of the farmers falls within the age group of 30-50 years, while 37.1% are within the age group of 51-70.(Table 1). Showing that majority of the farmers are within their economic and productive ages, since age of the farmer is important in determining productivity and adoption of innovation (Chikwendu *et al*, 1994; Kebede, 2001; Nwaru, 2004). This result implies that there is great prospect for increased and sustainable organic horticultural production among younger farmers in the study areas. More than one-third (46.8%) of the horticultural farmers had household size of 4-6 persons with 40.3% having 3-4 children. This means availability of cheap labour in the household for increased horticultural production using organic farming practices. Majority (72.6%) of the farmers was male, (74.2%) were Christians, and 43.6% of farmers inherited the land which is a common way of acquiring land in the zone. Also the table revealed that over half (54.8%) of the farmers made use of hired laborers on their farm. Most of these labourers are from Cross-River, Benue and Nassarawa States in the country. More than half (58%) the population are illiterate and with primary school education, 51.6% of the population had 10-30 years of farming experience. This gives an indication of the practical skill and knowledge which the respondents must have acquired for horticultural production in the area. However, (29.0%) of the farmers had 10-30 years of organic farming experience by default in horticulture and other cropping activities. Though the percentage is small it still means that it will not be difficult to work with this set of farmers on organic farming practices. The FGD revealed that there is the need to enlighten the farmer better on the differences between organic farming and traditional farming.

Table 1: Percentage distribution of horticultural farmers based on Socio-economic characteristics.

| Socio-economic Characteristics | Frequency | Percentage |
|--|-----------|------------|
| Age | | |
| Less than 30 | 8 | 12.9 |
| 30-50 | 31 | 50.0 |
| 51-70 | 23 | 37.1 |
| Household size | | |
| 1-3 | 17 | 27.4 |
| 4-6 | 29 | 46.8 |
| 7-10 | 10 | 16.1 |
| 11 and above | 6 | 9.6 |
| Sex | | |
| Male | 45 | 72.6 |
| Female | 17 | 27.4 |
| Religion | | |
| Islam | 15 | 24.2 |
| Christianity | 46 | 74.2 |
| Traditional | 1 | 1.6 |
| Number of children | | |
| No children | 7 | 11.3 |
| 1- 2 | 12 | 19.4 |
| 3-4 | 25 | 40.3 |
| 5-6 | 12 | 19.4 |
| 7-8 | 4 | 6.5 |
| 9-10 | 2 | 3.2 |
| Land acquisition | | |
| Family ownership /Inheritance | 27 | 43.6 |
| Communal | 11 | 17.7 |
| Personal /outright purchase | 6 | 9.6 |
| Rent | 15 | 24.2 |
| Lease | 3 | 4.8 |
| Source of labour | | |
| Family | 6 | 9.7 |
| Hired | 34 | 54.8 |
| Communal | 2 | 3.2 |
| Self | 15 | 24.2 |
| More than one | 5 | 8.1 |
| Educational Qualifications | | |
| Did not complete primary school. | 19 | 30.6 |
| Primary school | 17 | 27.4 |
| Secondary school | 8 | 12.9 |
| OND/HND/NCE | 13 | 21.0 |
| BSc | 5 | 8.1 |
| Years of farming experience | | |
| <10 | 20 | 32.3 |
| 10-20 | 16 | 25.8 |
| 21-30 | 16 | 25.8 |
| >30 | 10 | 32.3 |
| Years of farming experience in organic. | | |
| <10 | 35 | 56.4 |
| 10-20 | 8 | 12.9 |
| 21-30 | 10 | 16.1 |
| >30 | 9 | 14.5 |

Production constraints encountered by horticultural farmers on the use of organic farming practices.

The result in Table 2 indicates some of the production constraints encountered by horticultural farmers in the use of organic farming practices. Most important ones were: time consuming (96.8%), transportation, inadequate credit facilities and inadequate storage facility (91.9%), climate change (87.1%), capital intensive (79.0%), lack of extension agents (75.8%), inadequate technical know-how (74.2%), inadequate information (72.6%) and so on. The above result conforms to the findings of (FAO 1999) which stated that “organic farmers face huge uncertainties. Lack of information is a major obstacle to organic conversion, according to 73% of North American organic farmers. Extension personnel rarely receive adequate training in organic methods and studies have shown that they sometimes discourage farmers from converting. Furthermore, institutional support in developing countries is scarce - professional institutions capable of assisting farmers throughout production, post-production and marketing processes are non-existent in many developing countries”. During the FGD the farmers expressed their feelings that the use of poultry manure, farm yard manure consumes a lot of time and that it is not always easy to transport it to the farm sites compared to inorganic fertilizers.

Awareness and usage of organic farming practices by horticultural farmers

The highest organic farming practices farmers were aware of was crop rotation (95.2%) while the lowest was the use of biological agents for pest control (32.3%). Most (79.0%) of the respondents were using crop rotation and mixed cropping. Only 32.3% of the farmers use minimum tillage (Table 3). The FGD reveals that farmers use of organic farming practices is based on their Indigenous Technical Knowledge (I.T.K) and not as a result of conscious application of organic management practices as internationally recognized.

Result of Chi-square analysis.

Chi-square analysis (Table 4) revealed that, land acquisition, educational qualification and source of information have significant relationship with horticultural farmers' awareness and use of organic farming practices at $P=0.05$. This is in agreement with a priori expectation and it is consistent with Onyenweaku and Nwaru (2005) for food crop farmers in Imo state Nigeria. Education and training help to unlock the natural talents and inherent enterprising qualities of the farmer, enhances his ability to understand and evaluate new production techniques leading to increased productivity and income (Nwaru, 2007).

Table 2: Percentage distribution table showing constraints being faced by horticultural farmers in the use of organic farming practices.

| Constraints | Frequency | Percentage | Rank |
|------------------------------|-----------|------------|------|
| Capital intensive | 49 | 79.0 | 6 |
| Time consuming | 60 | 96.8 | 1 |
| Transportation | 57 | 91.9 | 2 |
| Consumer preference | 37 | 59.7 | 12 |
| Technical know -how | 46 | 74.2 | 8 |
| Inadequate information | 45 | 72.6 | 9 |
| Lack of extension agent | 47 | 75.8 | 7 |
| Market accessibility | 45 | 72.6 | 9 |
| Inadequate credit facilities | 57 | 91.9 | 2 |
| Stealing | 43 | 69.4 | 11 |
| Climate change | 54 | 87.1 | 5 |
| Inadequate storage facility | 57 | 91.9 | 2 |

Source: Field survey, 2009.

Table3: Frequency Distribution Table of Awareness and usage of organic farming practices by horticultural farmers

| Organic farming practices | Awareness | | Usage | |
|------------------------------------|-----------|------------|-----------|------------|
| | Frequency | Percentage | Frequency | Percentage |
| Crop rotation | 59 | 95.2 | 49 | 79.0 |
| Compost application | 47 | 75.8 | 40 | 64.5 |
| Mulching | 50 | 80.6 | 47 | 75.8 |
| Inter- cropping | 52 | 83.9 | 47 | 75.8 |
| Mixed cropping | 55 | 88.7 | 49 | 79.0 |
| Crop residue | 45 | 74.2 | 36 | 58.1 |
| Animal manuring | 47 | 75.8 | 38 | 61.3 |
| Planting of legumes or cover crops | 54 | 87.1 | 43 | 69.1 |
| Green manuring | 44 | 71.0 | 36 | 58.1 |
| Off farm organic waste | 33 | 53.2 | 27 | 43.5 |
| Biological pest | 30 | 48.4 | 24 | 38.7 |
| Minimum tillage | 33 | 53.2 | 20 | 32.3 |
| Alley cropping | 34 | 54.8 | 25 | 40.3 |

Source: Field survey, 2009.

Table 4: Chi-square analysis showing relationship between socio-economic characteristics and awareness and usage of organic farming practices

| Socio-economics | Awareness score | | | | Usage score | | | |
|---|-----------------|----|-------------|----------|-------------|----|-------------|----------|
| | Value | Df | Asymp. Sig. | decision | Value | df | Asymp. Sig. | Decision |
| Age | 9.024 | 8 | .340 | NS | 5.173 | 8 | .739 | NS |
| Household size | 14.604 | 12 | .264 | NS | 9.065 | 12 | .697 | NS |
| Sex | 1.645 | 2 | .439 | NS | 3.019 | 2 | .221 | NS |
| Marital status | 1.560 | 4 | .816 | NS | 5.801 | 4 | .214 | NS |
| Religion | 11.226 | 10 | .454 | NS | 1.193 | 4 | .879 | NS |
| Number of children | 12.644 | 10 | .244 | NS | 11.226 | 10 | .340 | NS |
| Land acquisition | 21.437 | 12 | .044 | S | 9.760 | 12 | .637 | NS |
| Average size of farm for organic | 15.338 | 12 | .223 | NS | 10.241 | 12 | .595 | NS |
| Source of labour | 8.020 | 8 | .432 | NS | 7.927 | 8 | .441 | NS |
| Educational qualification | 15.411 | 8 | .052 | S | 22.827 | 8 | .004 | S |
| Years of farming experience | 3.172 | 10 | .977 | NS | 9.737 | 10 | .464 | NS |
| Years of farming experience in organic farming | 17.189 | 12 | .143 | Ns | 12.286 | 12 | .423 | Ns |
| Source of information | 8.044 | 10 | .625 | Ns | 75.034 | 10 | .000 | S |

Source: Field survey, 2009., NS- Not Significant, S-Significant

CONCLUSION AND RECOMMENDATION.

Results from the study show that majority of the horticultural farmers in Oyo State were in their economic and productive ages and high level of farming experience. Hence there is hope for increased and sustainable organic horticultural production in the state. They were aware of all the organic farming practices though they are not using them regularly as it ought to probably due to some constraints such as time consuming, transportation, inadequate credit facilities, and inadequate storage facility, climate change, capital intensive, lack of extension agents, Technical know-how.

Sex and Educational qualification are the socio-economic status that affects the awareness and use of organic farming practices. Based on the findings of the study it was recommended that the government should encourage older and experienced farmers to be involved in organic horticultural production by empowering the horticultural farmers. This could be done through training and capacity building, provision of loan, education and market information on organic farming. Also Non-governmental and governmental organizations which specialize on organic agriculture should go a long way to encourage and educate farmers who are into horticulture on the health importance of consistence use of organic farming practices in the study area. Provision of market information on where and how to sell their organic produce should be made available to them.

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